WHAT IS CLAIMED IS:

1. A method for controlling the admission of connections in a wireless communication system between a base station and associated customer premise equipments (CPEs), including a requesting CPE, the method comprising:

receiving a request for a new connection from a requesting CPE;

summing the hard bandwidth commitments between a base station and associated CPEs, including the new connection and existing connections, based on a planned PHY mode for each connection;

determining an air link line rate between the base station and the associated CPEs based on a reference PHY mode;

if the air link line rate exceeds the hard bandwidth commitments, accepting the new connection and determining a second hard bandwidth commitments for the existing connections between the base station and the associated CPEs based on a current PHY mode for each connection, else denying the new connection;

if the air link line rate exceeds the second hard bandwidth commitments, allocating air link resources to the new connection; else determining whether additional air link resources are available; and

if additional air link resources are available, allocating the air link resources to the new connection; else suspending at least one of the existing connections between the base station and the associated CPEs.

2. The method of Claim 1, wherein the additional air link resources include available bandwidth in an uplink subframe and available bandwidth in a downlink subframe.

3. The method of Claim 1, wherein suspending the at least one of the existing connections includes suspending a connection between the base station and the requesting CPE.

4. The method of Claim 3, wherein the suspended connection between the base station and the requesting CPE is the new connection.

5. The method of Claim 1, wherein suspending the at least one of the existing connections includes suspending connections that are using a more robust PHY mode than the planned PHY mode.

6. The method of Claim 1, wherein suspending the at least one of the existing connections includes randomly suspending connections between the base station and the associated CPEs.

7. The method of Claim 6, wherein the base station and the associated CPEs are located in a sector.

8. The method of Claim 1, wherein suspending the at least one of the existing connections includes suspending connections between the base station and the associated CPEs in a round-robin fashion.

9. The method of Claim 1, further comprising:

assigning a precedence priority value to each of the existing connections; and

suspending the at least one of the existing connections based on the assigned precedence priority value.

10. The method of Claim 9, wherein suspending the at least one of the existing connections is performed in a round-robin fashion.

11. The method of Claim 9, wherein suspending the at least one of the existing connections is performed in a random fashion.

12. The method of Claim 1, further comprising:

selecting a more robust PHY mode for at least one of the existing connections as a new current PHY mode;

determining a third hard bandwidth commitments between the base station and the associated CPEs based on the new current PHY mode;

if the air link line rate no longer exceeds the third hard bandwidth commitments, suspending another of the existing connections between the base station and the associated CPEs.

13. The method of Claim 1, further comprising:

selecting a less robust PHY mode for at least one of the existing connections as a new current PHY mode;

determining a third hard bandwidth commitments between the base station and the associated CPEs based on the new current PHY mode;

if the air link line rate exceeds the third hard bandwidth commitments, unsuspending the at least one of the existing connections that was suspended between the base station and the associated CPEs.

14. The method of Claim 1, wherein the hard bandwidth commitments include constant bit rate (CBR) connections.

15. The method of Claim 1, wherein the hard bandwidth commitments include a minimum cell rate (MCR) portion of a guaranteed frame rate (GFR) connection.

16. The method of Claim 1, wherein the hard bandwidth commitments include some function of sustainable cell rate (SCR) for variable bit rate (VBR) and variable bit rate real-time (VBR-rt) connections.

17. The method of Claim 1, wherein the hard bandwidth commitments include measured bandwidth requirements for connections to provide a quality of service.

18. A process for controlling connections between a base station and a customer premise equipment (CPE) in a wireless communication system, wherein the base station and the CPE each are configured to adaptively adjust a PHY mode for an uplink which includes one or more connections, wherein a planned PHY mode is selected for the uplink based on, for example, the wireless communication system's geographic region, and wherein a current PHY mode corresponds to the modulation technique used by the CPE to transmit data, the method comprising:

receiving an uplink that is modulated by a CPE using a current PHY mode;

determining a quality for a channel parameter for the uplink;

comparing the quality with a current PHY mode lower threshold;

comparing the quality with a current PHY mode upper threshold;

if either the current PHY mode upper or lower threshold has been crossed, determining a normalized hard bandwidth commitments for the uplink based on a second current PHY mode to be used by the CPE;

if the air link line rate exceeds the normalized hard bandwidth commitments between the CPE and the base station, applying the second current PHY mode to the uplink, else suspending a connection between the CPE and the base station.

19. The method of Claim 18, wherein suspending the connection includes:

assigning a precedence level to each connection between the base station and the CPE, wherein the precedence level is utilized to select the suspended connection between the base station and the CPE.

20. The method of Claim 18, wherein the suspended connection between the base station and the CPE is a new connection.

21. The method of Claim 18, wherein the suspended connection is using a more robust PHY mode than a planned PHY mode.

22. The method of Claim 18, wherein the suspended connection is randomly selected from connections between the CPE and the base station and from connections between a second CPE and the base station.

23. The method of Claim 22, wherein the base station, the CPE, and the second CPE are all located in a sector.

24. The method of Claim 23, wherein the suspended connection is selected in a round-robin fashion from connections between the CPE and the base station and from connections between the second CPE and the base station.

25. The method of Claim 18, further comprising:

assigning a precedence priority value to each connection; and

suspending the connection based on the assigned precedence priority value.

26. The method of Claim 25, wherein suspending the connection is performed in a round-robin fashion.

27. The method of Claim 25, wherein suspending the connection is performed in a random fashion.

28. The method of Claim 18, wherein the normalized hard bandwidth commitments include constant bit rate (CBR) connections.

29. The method of Claim 18, wherein the normalized hard bandwidth commitments include a minimum cell rate (MCR) portion of a guaranteed frame rate (GFR) connection.

30. The method of Claim 18, wherein the normalized hard bandwidth commitments include some function of sustainable cell rate (SCR) for variable bit rate (VBR) and variable bit rate real-time (VBR-rt) connections.

31. The method of Claim 18, wherein the normalized hard bandwidth commitments include measured bandwidth requirements for connections.

32. The method of Claim 18, further comprising:

selecting a less robust PHY mode for at least one connection between the CPE and the base station as a new current PHY mode;

determining a second normalized hard bandwidth commitments between the base station and the CPE based on the new current PHY mode;

if the air link line rate exceeds the second normalized hard bandwidth commitments, unsuspending the suspended connection between the base station and the CPE.

33. A process for controlling connections between a base station and a customer premise equipment (CPE) in a wireless communication system, wherein the base station and the CPE each are configured to adaptively adjust channel characteristics, for example a PHY mode, for a downlink which includes one or more connections, wherein a planned PHY mode is selected for the downlink based on, for example, the wireless communication system's geographic region, and wherein a current PHY mode corresponds to the modulation technique used by the base station to transmit data, the method comprising:

receiving a downlink that is modulated by a base station using a current PHY mode;

determining a quality for a channel parameter for the downlink;

comparing the quality with a current PHY mode lower threshold;

comparing the quality with a current PHY mode upper threshold;

if either the current PHY mode upper or lower threshold has been crossed, determining a normalized hard bandwidth commitments for the downlink based on a second current PHY mode to be used by the base station;

if the air link line rate exceeds the normalized hard bandwidth commitments between the CPE and the base station, applying the second current PHY mode to the downlink, else suspending a connection between the CPE and the base station.

34. The method of Claim 33, wherein suspending the connection includes:

assigning a precedence level to each connection between the base station and the CPE, wherein the precedence level is utilized to select the suspended connection between the base station and the CPE.

35. The method of Claim 33, wherein the suspended connection between the base station and the CPE is a new connection.

36. The method of Claim 33, wherein the suspended connection is using a more robust PHY mode than a planned PHY mode.

37. The method of Claim 33, wherein the suspended connection is randomly selected from connections between the CPE and the base station and from connections between a second CPE and the base station.

38. The method of Claim 37, wherein the base station, the CPE, and the second CPE are all located in a sector.

39. The method of Claim 38, wherein the suspended connection is selected in a round-robin fashion from connections between the CPE and the base station and from connections between the second CPE and the base station.

40. The method of Claim 33, further comprising:

assigning a precedence priority value to each connection; and

suspending the connection based on the assigned precedence priority value.

41. The method of Claim 40, wherein suspending the connection is performed in a round-robin fashion.

42. The method of Claim 40, wherein suspending the connection is performed in a random fashion.

43. The method of Claim 33, wherein the normalized hard bandwidth commitments include constant bit rate (CBR) connections.

44. The method of Claim 33, wherein the normalized hard bandwidth commitments include a minimum cell rate (MCR) portion of a guaranteed frame rate (GFR) connection.

45. The method of Claim 33, wherein the normalized hard bandwidth commitments include some function of sustainable cell rate (SCR) for variable bit rate (VBR) and variable bit rate real-time (VBR-rt) connections.

46. The method of Claim 33, wherein the normalized hard bandwidth commitments include measured bandwidth requirements for connections to provide a quality of service.

47. The method of Claim 33, further comprising:

selecting a less robust PHY mode for at least one connection between the CPE and the base station as a new current PHY mode;

determining a second normalized hard bandwidth commitments between the base station and the CPE based on the new current PHY modes;

if the air link line rate exceeds the second normalized hard bandwidth commitments, unsuspending the suspended connection between the base station and the CPE.

48. A communication system that is configured to control the admission of new connections and the suspension of existing connections between a base station and customer premise equipments (CPEs), wherein the base station and the CPEs are each configured to increase or decrease the robustness of their transmission modulation technique by adapting channel characteristics, for example, their PHY mode, the system comprising:

a first CPE having a first modem configured to modulate data in a communication link using a first current PHY mode and a first planned PHY mode;

a second CPE having a second modem configured to modulate data in a communication link using a second current PHY mode and a second planned PHY mode;

a base station having a third modem configured to transmit and receive data to and from the first and second CPEs; and

a call admission control (CAC) module configured to determine whether to allow a new connection between the first CPE and the base station or between the second CPE and the base station based on a comparison of a total air link line rate between the first and second CPEs and the base station, wherein the total air link line rate is based on a reference PHY mode, with a bandwidth commitment value between the base station and the first and second CPEs, wherein the bandwidth commitment value is based on the first and second planned PHY modes.

49. The system of Claim 48, wherein the CAC module is located at the first CPE.

50. The system of Claim 48, wherein the CAC module is located at the base station.

51. The system of Claim 48, wherein the third modem comprises:

a transmitter module configured to convert digital data to a modulated analog signal; and

a receiver module configured to demodulate an analog modulated signal to digital form.

52. The system of Claim 51, wherein the third modem further comprises:

a Receive Signal Quality (RSQ) module coupled with the receiver module and configured to monitor signal quality of existing connections between the first CPE and the base station, and the second CPE and the base station; and

a control module interfaced with the RSQ module and the transmitter module, and configured to select the first current PHY mode for the first CPE based on the signal quality monitored by the RSQ module, and configured to select the second current PHY mode for the second CPE based on the signal quality monitored by the RSQ module.

53. The system of Claim 52, wherein the third modem further comprises a precedence module interfaced with the control module and configured to suspend or allow the existing connections and the new connection based on comparing the total air link line rate with a second bandwidth commitment value determined from the first current PHY mode and the second current PHY mode.

54. The system of Claim 53, wherein the control module is configured to compare a bit per symbol rate for the existing connections to the new connection in determining the second bandwidth commitment value.

55. The system of Claim 54, wherein the comparison is performed by normalizing the existing connections with the reference PHY mode used to calculate the total air link line rate.

56. The system of Claim 54, wherein the precedence module randomly selects either the existing connections or the new connection to suspend if the second bandwidth commitment value exceeds the total air link line rate.

57. The system of Claim 54, wherein the precedence module selects either the existing connections or the new connection to suspend in a round-robin fashion if the second bandwidth commitment value exceeds the total air link line rate.

58. The system of Claim 54, wherein each of the existing connections and the new connection are each assigned a priority value which is used in determining whether to suspend or allow the existing connections and the new connection.

59. The system of Claim 58, wherein the priority value assigned to the existing connections is different than the priority value assigned to the new connection.

60. The system of Claim 58, wherein the first current PHY mode is associated with channel characteristics which include a current modulation technique and a current forward error correction.

61. The system of Claim 58, wherein the first planned PHY mode is associated with channel characteristics which include a planned modulation technique and a planned forward error correction.

62. The system of Claim 61, wherein the first planned PHY mode and the second planned PHY mode are both determined by radio frequency planning in a sector.

63. The system of Claim 58, wherein the precedence module is configured to select a connection from the existing connections and the new connection which has the lowest priority value to suspend.

64. The system of Claim 58, wherein the precedence module is configured to randomly select a connection to suspend from the existing connections and the new connection if the existing connections and the new connection have the same priority value.

65. The system of Claim 58, wherein the precedence module is configured to select a connection to suspend from the existing connections and the new connection in a round-robin fashion if the existing connections and the new connection have the same priority value.

66. A method of performing call admission control in a communication system that supports subscriber level adaptive PHY modes, the system including a base station and at least one customer premise equipment (CPE), the method comprising:

determining planned PHY modes for the CPEs based on their planned modulation techniques and quality of service requirements;

determining a reference line rate for the communication system when using a reference PHY mode;

determining multiplicative rates for normalizing CPEs planned PHY modes to the reference PHY mode;

comparing the reference line rate to bandwidth requirements using the normalized planned PHY modes; and

allowing or denying a new connection between the base station and the CPEs based on the comparison.

67. The method of Claim 66, further comprising:

determining a current PHY mode for the CPEs based on their current modulation techniques and quality of service requirements;

determining multiplicative rates for normalizing CPEs current PHY modes to the reference PHY mode;

comparing the reference line rate to the bandwidth requirements using the normalized current PHY modes; and

selecting a connection between the base station and the CPEs to suspend based on the comparison.

68. The method of Claim 67, further comprising:

assigning a precedence level to each connection between the base station and the CPEs, wherein the precedence level is utilized to select the connection between the base station and the CPEs to suspend.

69. The method of Claim 68, wherein the reference PHY mode is a least robust modulation technique combined with a minimum forward error correction bits.

70. The method of Claim 68, wherein the reference PHY mode is a most robust modulation technique combined with a maximum forward error correction bits.

71. The method of Claim 68, wherein the bandwidth requirements includes hard bandwidth commitments.

72. A system for performing call admission control in a communication system that supports subscriber level adaptive PHY modes, the system comprising:

terminals with associated current and planned PHY modes, wherein each terminals modulates connections using the current PHY mode, and wherein the planned PHY mode is selected for each terminal based on system level characteristics;

a base station configured to transmit and receive data to and from the terminals via the connections; and

a call admission control module configured to determine whether to allow a new connection between the terminals and the base station by comparing an air link line rate with a total hard bandwidth commitment between the terminals and the base station.

73. The system of Claim 72, wherein the air link line rate is a total of all available bandwidth between the terminals and the base station assuming each terminal transmits using a reference PHY mode.

74. The system of Claim 72, wherein the total hard bandwidth commitment is the total of all committed bandwidth between the terminals and the base station assuming each connection is modulated using each terminal's planned PHY mode.

75. The system of Claim 74, wherein the total hard bandwidth commitment includes normalizing each terminal's bandwidth using each terminal's planned PHY mode.

76. The system of Claim 74, further comprising a precedence module configured to select a connection to suspend based on comparing a second total hard bandwidth commitment, wherein the second total hard bandwidth commitment is based on a current PHY mode for each of the terminals.

77. The system of Claim 76, wherein the second total hard bandwidth commitment is a total of all requested bandwidth between the terminals and the base station assuming each connection is modulated using each terminal's current PHY mode.

78. The system of Claim 77, wherein the total of all requested bandwidth includes normalizing each terminal's bandwidth using each terminal's current PHY mode.

79. A method for controlling bandwidth in a communication system that is configured for adaptive modulation where new and existing connections between customer premises equipments (CPEs) and a base station can be suspended and unsuspended depending on

planned and current bandwidth utilization for the communication system, the method comprising:

determining a first planned PHY mode for a first connection between a base station and a first CPE;

receiving data which is modulated using a first current PHY mode via the first connection;

determining a signal quality for the received data;

comparing the signal quality with either an upper threshold value or a lower threshold value;

if the signal quality has increased across the upper threshold value, selecting a less robust PHY mode to replace the first current PHY mode for the first connection;

if the signal quality has decreased across the lower threshold value, selecting a more robust PHY mode to replace the first current PHY mode for the first connection;

if the more robust PHY mode is selected, comparing an air link line rate which is based on a reference PHY mode with a hard bandwidth commitment value for connections between the CPEs and base station which is base on a current PHY mode for each CPE's connections; and

if the air link line rate does not exceed the hard bandwidth commitment value, suspending a second connection.

80. The method of Claim 79, wherein the CPEs and the base station are located in a sector.

81. The method of Claim 79, wherein the hard bandwidth commitment value includes constant bit rate (CBR) connections.

82. The method of Claim 79, wherein the hard bandwidth commitment value includes a minimum cell rate (MCR) portion of a guaranteed frame rate (GFR) connection.

83. The method of Claim 79, wherein the hard bandwidth commitment value includes some function of sustainable cell rate (SCR) for variable bit rate (VBR) and variable bit rate real-time (VBR-rt) connections.

84. The method of Claim 79, wherein the hard bandwidth commitment value includes measured bandwidth requirements for connections to provide a quality of service.

85. The method of Claim 79, wherein the suspended second connection is selected randomly from all connections between the base station and the CPEs.

86. The method of Claim 79, wherein the suspended second connection is selected in a round robin fashion from all connections between the base station and the CPEs.

87. The method of Claim 79, further comprising:

assigning a first precedence level to the first connection;

assigning a second precedence level to the second connection, wherein the second connection is suspended since the second precedence level has a lower priority than the first precedence level.

88. The method of Claim 79, wherein radio frequency planning determines the first planned PHY mode.

89. The method of Claim 79, wherein the signal quality is determined by measuring a bit error rate (BER).

90. The method of Claim 79, wherein the signal quality is determined by measuring a signal to noise ratio (SNR).

91. The method of Claim 87, wherein the suspended second connection is selected randomly from between the first and second connections, wherein the first and second connections have the same precedence level.

92. The method of Claim 87, wherein the suspended connection is selected in a round-robin fashion from between the first and second connections, wherein the first and second connections have the same precedence level.

93. The method of Claim 79, wherein the first planned PHY mode comprises a modulation technique coupled with forward error correction (FEC).

94. The method of Claim 79, wherein the first current PHY mode comprises a modulation technique coupled with forward error correction (FEC).

95. A method for selecting connections to suspend between a base station and associated terminals in a wireless communication system, wherein the base station and the associated terminals each are configured to adaptively adjust channel characteristics, for example a PHY mode, for each of their connections, wherein a current PHY mode

corresponds to the modulation technique used by the terminals and base station to transmit data, the method comprising:

changing a current PHY mode for a selected connection between a base station and associated terminals;

summing the hard bandwidth commitments between the base station and the associated terminals based on the current PHY mode for each connection;

determining an air link line rate for all connections between the base station and the associated terminals based on a reference PHY mode;

if the air link line rate exceeds the hard bandwidth commitments, allocating air link resources to the selected connection, else suspending at least one of the connections between the base station and the associated terminals.

96. The method of Claim 95, wherein the hard bandwidth commitments is a total of all requested bandwidth between the associated terminals and the base station assuming each connection is modulated using its current PHY mode.

97. The system of Claim 96, wherein the total of all requested bandwidth includes normalizing each connection's bandwidth using each connection's current PHY mode.

98. The method of Claim 95, wherein the base station and the associated terminals are located in a sector.

99. The method of Claim 95, wherein suspending the at least one of the connections includes suspending connections between the base station and the associated terminals in a round-robin fashion.

100. The method of Claim 95, wherein suspending the at least one of the connections includes randomly suspending connections between the base station and the associated terminals.

101. The method of Claim 95, further comprising:

assigning a precedence priority value to each of the connections; and

suspending the at least one of the connections based on the assigned precedence priority value.

102. The method of Claim 101, wherein suspending the at least one of the existing connections is performed in a round-robin fashion.

103. The method of Claim 101, wherein suspending the at least one of the existing connections is performed in a random fashion.